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THE IC-6000[®] VACUUM DEPOSITION CONTROLLER.

From Inficon comes the IC-6000: a thin-film controller to help you detect and correct deposition deviations before they adversely affect your process.

With real 0.1 Å/sec rate resolution and increased sensitivity, the IC-6000 provides a degree of precision and stability unattainable with any other controller. Yet it simplifies operation and programming by guiding you step-by-step through process parameters with video displays.

Select our unique Crystal-Switch[™] option, and you'll greatly enhance process security. A dual-crystal sensor, CrystalSwitch ensures rate control despite crystal failure, or permits you to dedicate one crystal for each source in a two-material, two-source process.

Read all the ways Inficon's IC-6000 thin-film controller can bring the highest quality to your depositions. Then you'll know why you should immediately make a place for it in your process.

FROM INFICON.

TES



Technical Engineering Services

140 Sylvania Ave., Santa Cruz, CA 95060-2134
(831) 429-8992 FAX (831) 429-5015
E-mail: tesmail@tescal.com www.tescal.com

THE IC-6000 BRINGS ACCURACY, RELIABILITY AND SIMPLICITY TO YOUR DEPOSITIONS.

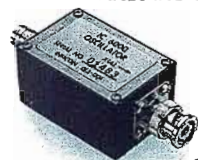
Deviations during deposition can affect the quality of your products dramatically, unless you're maintaining precise control of your process with the IC-6000.

Inficon's thin-film controller is designed to help you achieve maximum yield from every run.

The result of more than a decade of Inficon vacuum deposition experience, the IC-6000 incorporates the latest state-of-the-art microprocessor technology. You'll find it's the most reliable and easy-to-operate deposition controller available today.

The IC-6000's resolution is first-rate.

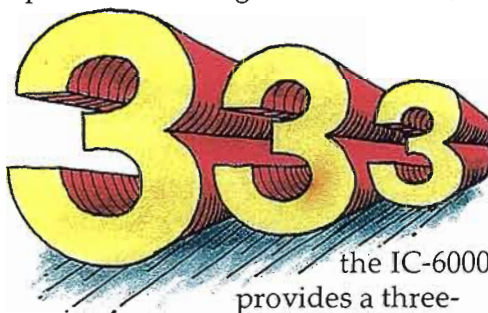
With its ultra-stable 112.3 mHz high-frequency oscillator, the IC-6000 can discern 0.1 Å in a 0.2 second sample period—real 0.1 Å/sec rate control—for every deposition.



Thus, even small deviations can be detected and corrected almost instantly.

For improved accuracy, the IC-6000 goes straight to the source.

Since rate control is dependent upon establishing source control,



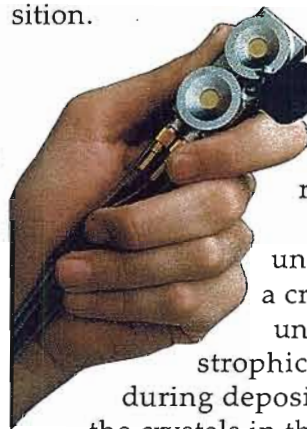
the IC-6000 provides a three-parameter loop control. This allows the instrument to be precisely matched to your source—from Electron Beam to RF heat.

The three parameters—gain, approach and limit—enable you to tweak rate control to a point

previously achieved only by three-mode loop controllers. Which gives you significantly tighter rate control during critical depositions.

CrystalSwitch gives you two crystals to prevent one catastrophe.

With CrystalSwitch, Inficon's dual-crystal sensor, the IC-6000 protects the integrity of your deposition.



The CrystalSwitch option ensures that rate and thickness will be unaffected when a crystal becomes unstable or catastrophic failure occurs during deposition. If one of the crystals in the sensor head fails, a second immediately and automatically takes up rate



and thickness control. There's no interruption in your process and no reduction in yield.

Choose the head that makes the most sense in your process.

Because sensing is critical to deposition control, four other sensor heads are offered for use with



the IC-6000. One of them is sure to meet the requirements of your particular process.

Like the dual-crystal sensor, Inficon's standard, bakeable, sputtering, and compact vertical models incorporate integral water lines to maintain high thermal stability. The sensors are made of materials especially chosen for durability and vacuum compatibility.

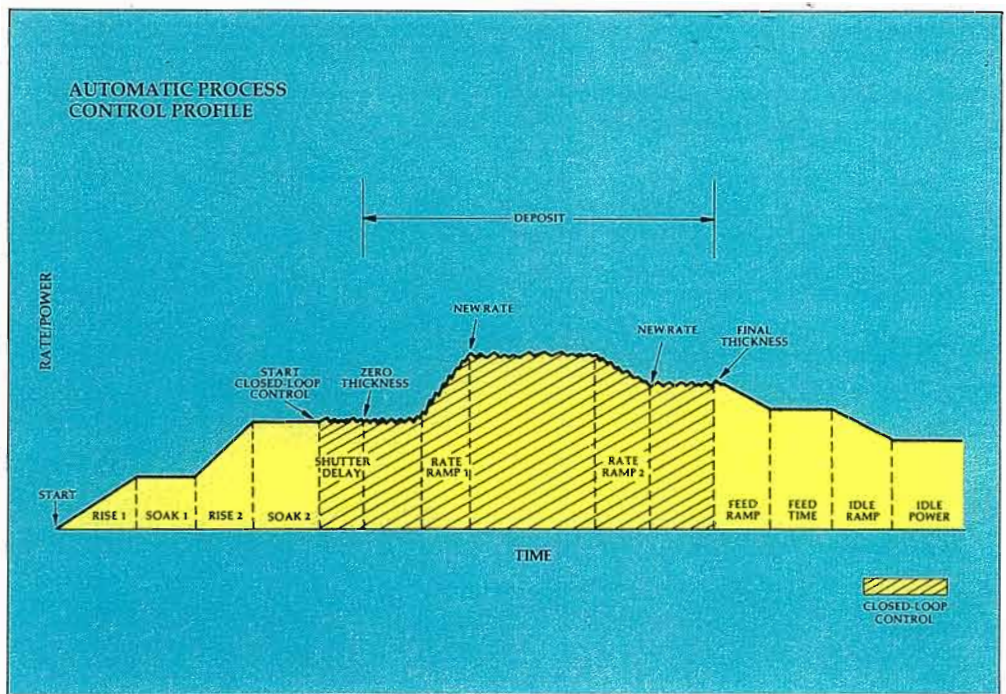
You end up with total deposition control when you start with the IC-6000.

The IC-6000's precise rate control, accurate source control, and improved sensing give you complete command of every deposition—from initial power through final thickness and ramp to idle power. Even if you're controlling as many as four separate sources with four crystals.

You can also change rates at any point during deposition simply by programming the Rate Ramp feature. And in a multi-layer deposition, Inficon's controller lets you bring the next source up to soak power and hold it there, ready for deposition, to reduce total process time.

Inficon engineers worked hard to make the IC-6000 easy to use.

The IC-6000 was designed with simplicity in mind for efficient,



error-free operation and programming. Confusing arrays of lights, buttons and switches are now archaic. Instead, there's a simple keyboard and a CRT screen.

Five video displays provide operators with a maximum of data throughout depositions. For deeper process insight and early warning of developing trouble, there's also a graphic display of rate deviation in real-time.

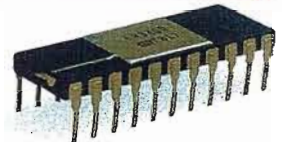


Programming the IC-6000 is simple, too. You can easily tailor each of its six complete and independent film programs to suit your process needs. The film program display steps through each of 37 programmable functions, allowing you to enter program parameters or delete unused functions for each film program.

The IC-6000 has built-in protection for your process.

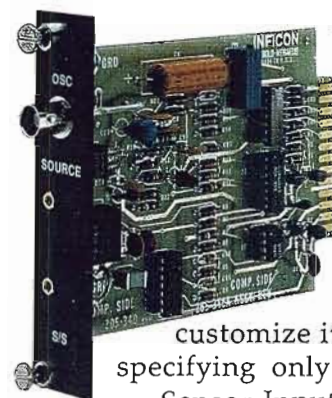
Inficon's thin-film controller

is not affected by line-power or battery failures because memory is retained in EAROM chips—forever, or until you reprogram. Thus, stored programs remain totally intact and your process stays totally secure.



You get extra security, too, when setting up or locking in your program. The IC-6000 provides a unique LockCode™ to give you immediate, direct and tamper-proof access to your program without mechanical keys.

The IC-6000: the cost-effective way to fulfill your present and future deposition control requirements.



Inficon's 3rd generation controller has the flexibility inherent in modular construction. You

customize it yourself by specifying only the Source/Sensor, Input/Output and Analog Output you need to meet current process requirements. Later, if process needs change, you can add other modules to increase the instrument's capabilities.

SPECIFICATIONS:

Thickness Display Range	0 to 999.9 kÅ
Thickness Display Resolution (three automatic ranges)	1Å from 0 to 9.999 kÅ—10Å from 10 to 99.99 kÅ— 100Å from 100 to 999.9 kÅ
Rate Display Range	0.0 to 999 Å/sec
Rate Display Resolution	0.1Å/sec at programmed rate of less than 25Å/sec; 1Å/sec at all other rates, and auto ranging
Accuracy (Thickness and Rate Display)	± 1 count
Rate Control Range	0.1 to 999.9 Å/sec
Measurement and Control Loop Update Period	200 milliseconds
Programmable Functions (6 film programs; 37 parameters)	
Density	0.8 to 99.99 gm/cc
Z-Ratio	0.1 to 3.999
Tooling	10 to 399%
Ramp Times (4 set points)	0 to 99:59 M:S
Soak Times (2 set points)	0 to 99:59 M:S
Soak Power (2 set points)	0 to 99%
Sensor	1 to 4
Source	1 to 4
Gain	1 to 99
Approach	0 to 99
Limiter	0.1 to 49.9%
Rate	0.0 to 999.9 Å/sec
Shutter Delay	0 to 99:59 M:S
Thickness Limit (2 set points)	0.000 to 999.9kÅ
Feed Power	0 to 99%
Feed Time	0 to 99:59 M:S
Idle Power	0 to 99%
Max Power	0 to 99%
CrystalSwitch (2 parameters)	0 to 9 (each)
Time Limit	0 to 99:59 M:S
PreSoak Enable	Enable/disable
Rate Ramps (3 parameters)	2 ramps (sets new rate and rate of change)
Plot Dwell	1-99 measurements per display point
Rear Panel Plug-In Modules	
Input/Output Modules each containing 4 independently pro- grammable external control input ports (contact closure or 15 to 36 Vac) and 4 inde- pendently programmable control output relays (contact rating 220V max., 125 VA)	1 standard module; 1 optional module (with 99 choices for programming each output and 16 choices for programming each input)
Source/Sensor Modules	1 or 2 standard, depending on model; up to a total of 4 modules
Source Control and Crystal Sensor Input	Source control, 0 to 10 ± 10 volts
RS-232C Computer Interface Bus	Optional
Analog Output, Rate or Thickness	0 to 10 volts; optional—0-999 Å/sec (rate); 0-1000 Å/sec (thickness)
Power Requirements	100/120/200/240V ± 5%, 50-60 Hz, 100 VA
Warm-Up Time	None necessary; 10 minutes minimum for maximum stability
Operating Temperature	0-50°C (32-122°F)
Size	13.3 cm H (5.25") x 42.5 cm W (16.7") x 44.4 cm D (17.5"); mountable in a 19" rack
Weight	10.88 kg (25 lbs.)

IC-6000, CrystalSwitch, and LockCode are registered trademarks of Inficon Leybold-Heraeus, Inc.

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LEYBOLD-HERAEUS

6500 Fly Road, East Syracuse, New York 13057 • (315) 437-0377 TWX: 710 541-0594
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